CONFIDENTIAL

GEOTHERMAL DATA LOG

TECTON GEOLOGIC

Company ESI Trans-Pacific Geothermal
Well name ESI A-S-alt
Field Vale
County Malheur State Oregon
Location 714.47' E 101.2' S of N 1/4 Corner
Sec 33 T18S N45E
Elevation 2469.5' (KB=21')
Contrator/Rig Nabors 164
Spud Date 02/05/94 TD Date 03/05/94
TD 5757' True Vertical Depth 5545.7'
Bottom Hole Location 566.7E 931.4'N
Well Status Completed
Company Representative Bill Rickard Paul Stroud

LOGGED INTERVAL

Date Logged 02/05/94 to 03/07/94
Depth Logged 64' to 5757'
Mud Drilling 64' to 5757'
Air Drilling to
Temperature Instrument Type T TYPE THERMOCOUPLE
Log Scale 1: 600 Unit Number 323
Log Prepared By Mike McLaughlin
Wayne Monger

HOLE SIZE / CASING

HOLE SIZE		CASING	
12.25"	to 525'	9 5/8"	at 506'
8.75"	to 3015'	7"	at 3010'
6.25"	to 5757'	5"	at 5723'
	to		at
	to		at

STEAM ENTRIES

LOST CIRCULATION ZONES

316'	Total Loss
4060-4130'	50-60 BPH
4407-4410'	Total Loss
4733'	Total Loss

REMARKS

Run E-Logs at 3015' & 5757'. Run 5" slotted liner f/2902-5723'. Run T & P Logs & Inj Test.

LITHOLOGY SYMBOLS

Clay	Limestone	Tuff/ Tuff Seds
Claystone	Altrd Zone	Rhyolite
Siltstone	Ash	Andesite
Sandstone	Obsidian	Basalt

LOG SYMBOLS

Wireline Log	Casing Shoe
Steam/Water Entry	Orifice/Flow Test
Deviation Survey	Cored Interval No Recovery

SECONDARY MINERALS

Q - Quartz
C - Calcite
P - Pyrite
E - Epidote
Ch - Chlorite
H - Hemitite
-

rare	<< 1%
trace	< 1%
minor	1% up to 4%
common	4% up to 7%
abun	7% up to 10%
	> 10%

ABBREVIATIONS

NB	New Bit	BHT	Bottom Hole Temp
RRB	Re-run Bit	C	Carbide Test
CB	Core Bit	NR	No Returns
WOB	Weight On Bit	LAT	Logged after Trip
SPM	Strokes/Minute	CFM	Cubic Feet/Minute

TECTON GEOLOGIC

TRANS-PACIFIC GEOTHERMAL ESI Vale A-S-ALT

Scale 1 : 600

DESCRIPTIONS

Spud on 2/05/94, begin drilling 12.25" hole from 63'.

Sandstone/Cong: wht, buff, yel-red brn, med gry-blk, dk brn, sft-mod hd, r hd, com fri, abun disagg/unconsol, v fn gr-pebble, subang-rndd, pr sorting, pred qtz - silicic sltstn - sltstn - basalt grs, loc com cly mtx, calc cmt, com hem/limon stng, r chlor, r pyr.

Siltstone: lt gry-lt blu gry, med gry, lt gry brn, occ sl grn cast, soft-frm, loc mod hd, mass, pred silt w/ clay/altrd tuffaceous mtx, loc grdg to v fn ss, r biot & chlor flakes, r-tr hematitic rock frags, r poss glass shards, sl calc.

Sandstone: lt-med gry, lt gry grn, tan, frm-mod hd, fri, abun dissag, pred v fn-fn gr, mnr med gr, subang-rndd, occ ang, mod sorting, pred qtz grs, mnr-abun clay mtx, r-tr calc, r chlor, r-loc mnr dism & cube pyr.

Sandstone: pred lt-med gry-med bluish gry-med grnish gry, occ lt brnish gry, pred mod sft-mod hd w/ loc mod hd-hd silicified zones, fri, pred fn-v fn gr incr grdg to siltstone w/incr depth, com-pred ang-subang rel unalt grs, pred qtz xls/lithic frags/devit glass shards/tuffaceous seds, r biotite flks, mnr-loc abnt clay mtx, r-tr calc, loc r-tr disem pyr, r chlor alt.

Sandstone: pred v lt-lt bluish gry-med gry, loc sl grnish cast, pred mod sft-sft, fn-v fn w srtd ang-subang grs loc grding into siltstone w/ incr depth a/a, incr clay mtx, r-tr calc, v r-r disem pyr, r chlor alt.

Drill 12.25" hole to 525'. Set 9 5/8" csg @ 506'. Install & test new BOPE. Drlg ahead w/ 8.75" hole

Sandstone: lt-med gry, buff-v lt gry brn, sft-loc mod hd, fri, abun dissag, v fn-fn gr, mod-well sorted, subang-rndd, pred volc rock frags & qtz, grdg to siltstone w/incr clay mtx incr w/depth, r chlortzd frags, r dism pyr, r-tr calc.

Siltstone: v lt-lt gry, buff, lt gry brn, frm-sft, loc r mod hd, occ lt blu grn cast, mass, pred silt w/clay mtx, loc tr-com sand, loc v sl calc, r v fn hematitic rock frags, r chlor.

Siltstone: wht-v lt gry, buff, soft-frm, loc r mod hd, mass, pred silt grdg to v fn sandstone incr w/depth, clay mtx, sl calc, r chlor, loc r pyr.

Sandstone: wht-buff, lt gry brn, lt gry, occ sl grn cast, frm-mod hd, fri, loc hd when silicified, v fn-fn gr, pred well sorted, subang-rndd, pred qtz & volc rock frags, occ chlortzd & silicified volc rock frags, calc clay mtx, r chalcedony w/occ v fn dism pyr, loc r-mnr qtz vng, r-tr dism & vn pyr, r chlortzn, r-tr calc.

Siltstone: wht-v lt brnsh gry, buff, sft-frm, loc hd when silicified, pred slt grdg to v fn sandstone, slt incr w/depth, sl-mod calc clay mtx, r dism pyr, r fn volc rock frags.

Total loss of circ @ 818'. Set hi vis pill, incr mud vis. Drlg ahead w/ 50-80 bbls/hr loss.

Limestone: pred lt-med dk gryish brn, tan, mod sft-mod hd, fn-med gr, com silty, com poss org frags, loc intbbd w/ gry siltstone & tuffaceous seds, r-tr disem pyr.

Tuff Seds/Sandstone: wht-med grnish gry-med brnish gry, w srtd, med-fn gr, ang gr, mod-hly silic, v com hvly rexln/chlortzd basalt frags, intbbd w/ lmstn & wht clay, tr calc, tr pyr.

Basalt: pred med-dk blkish red-lt rdish brn-dk brn, v com lt-med dk gryish grn-grnish blk, occ bluish grn, mas, aphan-v fn xln, v com amyg w/ chlor & qtz & calc & hem & opal fill, mod sft-v hd, mod-hvly alt & loc chloritzd, r-tr pyr, com hem, com magetite, r calc, occ clr qtz xls.

Basalt: med-dk gry, lt-dk gry grn, med-dk red brn, occ blu grn, mod hd-hd, loc v hd, mass, hypidio tex, pred aphan, loc com fn gr, mod-str chlortzn mafics & felds altrn, incr hematite altrn, mnr-com amygs w/chlor & qtz & anhyd & calc & opal fill, mnr dism magnetite, r-tr dism pyr, r-tr calc, r clr qtz.

Basalt: lt-dk red brn, lt-med gry, lt-med grn gry, mod hd-hd, mass, hypidio tex, pred aphan, mod-loc str chlortzn mafics & felds altrn, mnr-com amygs w/chlor & smectite & qtz & anhyd fill, tr dism magnetite, r dism pyr, bcmg f/1160-1170' fresh-mod altrd, fn gr gran.

Mud loss after trip @ 30-40 bbls/hr, decr to 5-10 bbls/hr by 1240'.

Basalt: pred lt gryish grn-dk grnish blk, v com lt-med orn rd-brnish rd, mod sft-hd, aphan-microxln tx, com vis unalt olivine xls, v com frsh/glsy appr-com hvly chloritzd, v com amyg fill w/opal & chlor, occ gyp/anhyd xls, r-tr calc, v r yel orpiment, hvly oxidzd soil horizon @ 1220.

Claystone: tan-med brn, lt orng brn-med red brn, soft-frm, massive, smooth, homogeneous, sl calc, loc r silty.

Basalt: lt-med grnsh gry, lt-med gry brn, med red brn, mod hd-hd, loc v hd, mass, hypidio tex, pred aphan-loc com fn gr, com-abun amygds w/anhyd & chlor & qtz & calc, pred mod-str chlortzd mafics & felds clay altrn, com sl altrd, occ hyaloclastite (?) tex, mnr-abun dism magnetite, euhed qtz on calc & anhyd @ 1380', tr-com hem altrn, r dism pyr, loc r euhed anhyd.

Siltstone: lt gry grn-lt grn, buff-lt gry brn, sft-frm, pred silt in calc clay mtx, loc com sndy, r dism pyr, r chlor.

Basalt: red, orng, red brn, soft-mod hd, occ hd, mass, v str hematite altrn, wk relic tex, tr-mnr amygs w/pred qtz & calc fill, sl calc, r chlor.

Basalt: pred dk grnish gry-grnish blk, v com lt-med orng rd-brnish rd, mod hd-hd, incr frsh appr, aphan-microxln w/vis olivine phenos, tr trnsl anhyd xls, sl-mod chlrtzd

Siltstone: pred lt-med gryish grn-loc dk grn, occ tan-med dk brn, soft, frm, pred hvly chlrtzd-loc unalt, w srtd loc grd into fn gr sdstn, loc intbbd w/ vesic basalt, r-tr chlor & opal vng, occ trnsl anhyd xls.

Basalt: pred dk gry-blk, com med gry, loc red brn-grn brn, hd-v hd, mass, dense, fresh, hypidio tex, aphan bcmg fn gr gran w/com-abun felds laths & r-tr anhed-subhed olivine phenos, amyg poor, loc sl chlortzn, r anhyd.

Basalt: pred unalt dk grnish gry-grnish blk, v com chlor alt lt gryish grn-med dk gryish grn, loc com hem mnrlizd lt org rd-med dk rdish brn, r yel, com hd-v hd occ mod sft, fri, com hypidio tex, aphan-com fn gr xln w/com vis unalt olivine & pyrox & r felds xls, occ glssy appr, r qtz/opal, r-tr calc, r-loc abnt pyr/sulfides, r-com hem mnrlizd zones, r-com chlor alt.

Basalt: dk gry-blk, med gry grn, lt-med red gry, occ lt-med gry, pred mod hd, com hd-v hd, mass, hypidio tex, aphan-fn gr, fresh-incr mod-str chlortzd mafics & felds altrn, loc com felds laths & r subhed olivine, loc r euhed frac fill, r qtz vng, r dism pyr, loc r-mnr hematitic altrn, r-mnr calc.

Sandstone: buff-lt brn, lt grn brn, frm-loc mod hd, fri, v fn-fn gr w/tuffaceous clay mtx, ang-subrndd, mod srtg, pred qtz & volc rock frags, loc tr glass shards, occ sl-str chlortzd, r dism pyr, tr-mnr calc.

Siltstone: lt-med gry grn, med blu grn, med grn brn, sft-frm, mass, pred str chlortzn, loc sl-mod altrn, loc intrbdd w/hvly altrd vesic basalt & v fn chlortzd ss, r opal, r anhyd.

Pick up mud motor @ 2053' and begin Directional Run.

Basalt: pred med grnish gry-v dk grnish blk, v com alt zones lt-med dk brnish rd-med gryish grn, com hd-v hd, v com mod sft in chlor/clay alt zones, aphan-cryptoxln tx, vis rel unalt-hvly alt olivine & pyrox xls, r calc, r-com hem, t-mnr chlor.

Basalt: dk gry-blk, dk gry brn, hd-v hd, mass, fn gr hypidio tex, pred plags laths & pyrox w/tr-loc mnr olivine phenos, tr-mnr dism magnetite, intrbdd w/str-v str altrd zones w/aphan amyg tex, sft-mod hd, tr-com chlor & qtz & calc & anhyd amygs, str-v str hem & str chlor altrn, r-tr calc, r dism pyr.

Basalt: pred med-dk blkish grn, loc com v lt-med gryish grn, pred mod hd-hd, loc sft-mod sft w/hvly alt clay/chlor zones, aphan tx, tr-loc abnt hem mnrlizd, r pyr.

Fluid gain from downhole source. Start slow @ 2220' w/ incr to 1 bbl/min 2280'-2325'. Stop @ 2325'.

Basalt: pred med-v dk grnish gry-grnish blk, loc com v lt-med gryish grn, mod hd-v hd, pred aphan tx-loc com suc tx, v com unalt v fn-microxln olivine/pyrox/felds xls, loc sl-mod chlortzd, r-tr calc/chlor/opal microvng.

Finish mud motor run. Return to rotary drlg at 2408'.

Basalt: v lt gryish grn-med grn, mod sft-mod hd, aphan tx, com incr chlor alt w/ incr clay w/ depth, v com fresh basalt frags, r gyp xls.

Siltstone: pred lt grnish gry-med grn gry-tan-med dk brn, mod sft-sft, frm, w srtd loc grd to v fn sdstn, com v fn blk org frags, com bndd appr, r-com disem & vng pyr.

Basalt: pred wht-v lt grnish gry-med gryish grn, com med dk grnish gry-grnish blk, mod sft-mod hd, mod-hvly chlor alt grd to clay, loc com unalt frags, r-tr pyr, r-mnr chlor.

Tuffaceous Seds: v lt gry-med gryish grn, mod sft-sft, frm, abnt clr qtz frags/rhyolite lith frags/basalt lith frags/r devit glas shards, occ weld appr, v pr srtd, v ang-subang frags, loc hvy clay mtx, tr vis lin/bndg, r pyr, tr chlor.

Basalt: pred lt-med dk rdish brn, loc med grnish gry, hvly alt w/ hem & chlor to clay, v sft-sft, com fresh-sl alt basalt frags, com loc intbbd w/ tuff seds, r-tr qtz/opal, r-tr pyr, tr-com hem, tr-mnr chlor, v r-r yel sulf xls.

Tuff: lt-med brn, lt-med red brn, tan-buff, occ lt grn brn, frm-mod hd, mass, pred hematitic altrd matrix w/r-mnr v fn devit glass & rock frags & qtz & occ mafic xtls, grdg to reworked tuff seds/siltstone, sl calc, r qtz vng, r dism pyr, r chlor.

Sandstone: lt-med yel brn, lt red brn, clr/frosted, mod hd, fri, abun disagg, pred med gr, subang-rndd, mod-well sorted, pred frosted qtz grs w/o matrix, loc r-com hematitic clay/silt matrix w/v fn-med gr qtz grs & rock frags, sl calc, loc r dism & vn pyr.

Siltstone: pred med lt-dk gryish brn, occ mnr v lt-med grnish gry, mod sft, frm, pred silt grd to v fn sdstn & tuff seds, r-tr calc, r pyr, r-mnr chlor.

Basalt: lt-med dk gryish grn-grnish blk, loc med rdish brn, mod sft-hd, com fresh-sl chlor alt, loc intbdd w/ sdstn & siltstn, v r-tr qtz & calc vng, r-tr pyr, r-tr hem, tr-mnr chlor alt.

Drl 8.75" hole t/3015'. Run E-Logs. Set 7" csg @3010'. Install Master Valve&test BOPE. Drl w/6.25" bit.

7" csg
3016'

Tuffaceous Seds: lt-med red brn, med orng, lt gry brn, frm-mod hd, mass, tuffaceous matrix w/tr-loc abun divit glass shards & sl-str altrd v fn plag laths & brkn qtz xlts & lithic frags, mod-v str hematitic altrn, loc sl-mod chlortzn, sl calc, r dism & occ vn pyr, r qtz vng, inrbdd w/siltstone & occ sandstone.

Basalt: pred lt-med dk grnish gry, v com med-dk brnish rd, sft-mod hd, loc unalt/fresh appr-v hvly chlor/hem alt zones, occ loc mod-hvly bleached appr, com vesc fill w/ opal/chlor, r-tr anhyd xls, loc com intbbd w/ hem sltstn & sl alt tuff seds, v r-r pyr, tr-mnr chlor.

Sandstone: wht-v lt gry-lt grnish gry, mod sft, mod-w srtd ang med-fn sd sz grs, up to 95% clr qtz frags, sl-mod silic cmnt, r-tr mica flks, sl chlor alt.

Sandstone: wht-lt grnish gry-lt brnish gry, mod sft-mod hd, frm, fri, mod-w srtd ang-subang grs pred clr qtz frags, pred med-fn sd sz grs, loc sl chlor alt, sl silic, loc intbbd w/ med-dk rdish brn siltstn & alt basalt & tuff seds, tr-mnr clr & grn mica flks, r disem pyr.

Basalt: v lt grnish gry-med gryish grn-med brnish gry, occ med-dk grnish gry fresh frags, loc mod-hvly chlrtzd, occ loc-com bleached appr, aphan-microxln tex, vis mod-hvly alt rel olivene/pyrox/felds xls, loc intbbd w/ rdish brn siltstn & tuff seds, mnr-com opal/chlor fill ves, r-tr disem pyr.

Siltstone: med-dk red brn, lt-med brn, frm-mod hd, mass, pred clay matrix w/mnr-abun volc frags & qtz & r musc/chlor frags, grdg to clystone, occ sndy, sl calc, r dism pyr.

Sandstone: wht, clr, frosted, lt gry--gry grn, frm-loc mos hd, fri, abun disagg, fn-med gr, mod-well sorted, subang-rndd, pred qtz grs w/calc cmt, r musc/chlor flakes, r dism pyr.

Basalt: pred v lt-med gryish grn, loc occ med-dk grnish gry, mod hd-hd, aphan tx, pred vis v fn wht felds xls, com-pred sl-mod chlrtzd & bleached appr, r vesc filled w/ chlor/opal, r-tr clr anhyd xls, r-tr qtz, r-tr calc vng, r-tr disem pyr, r hem.

Rhyolite: pred lt-med purplish gry-lt grnish gry, hd-v hd, fri, mass, pred aphan-microxln tx w/r-tr fn qtz & felds xls vis, hly silic appr, occ sl bndd appr, r-mnr qtz, mnr calc, r-tr disem pyr, r hem, r chlor.

Rhyolite: v lt-lt gry, lt-med purplish gry, lt-med red brn-red gry, hd-v hd, brittle, mass, pred microxln tex w/r-tr v fn qtz & felds & mafic xtls, pred str-v str silicification & rexln, occ banded app, loc tr-com hematitic altrn, loc r chlortzd mafics, r-tr qtz vng, r-tr calc, r-tr dism pyr, loc r anhydrite.

Rhyolite: lt-med gry, loc com med red brn-red gry, loc mnr lt-med gry grn, hd-v hd, mass, microxln w/r-loc com qtz & felds & mafic xtls, str-v str silicification, mod str-str rexln, loc mnr banded app, occ mott app, loc tr-com hematitic altrn, loc mod chlortzn, r qtz vng, r-tr calc, r v fn dism pyr, r anhydrite.

Rhyolite: lt-med gry, lt-med blu gry, loc com med red brn & mnr lt gry grn, hd-v hd, brittle, mass, microxln w/r-tr qtz & felds xtls, mod-str silicification, mod-str rexln, loc tr-com wht unsilicifed tuff, loc banded app, loc tr-mnr hematitic altrn, occ chlortzd, r-tr calc, r qtz vng, r dism pyr.

Rhyolite: f/3950-3980' v lt-med grn, lt-med gry grn, occ wht, mnr red brn, hd-v hd, mass, microxln w/r-tr v fn qtz & felds & chlortzd mafics, mod-v str silicification w/mod-str chlortzn of matrix, mod-str rexln, loc mnr-com unsilicified, loc tr-mnr hematitic altrn, r qtz vng r calc, r dism pyr, r anhydrite.

Obsidian: blk-v dk gry, loc chlortzd alt to v lt-med grn, mas w/occ felds phenos, glsy appr, hly silic, concoid frac, occ vis flow bnd, com spher perlitc, com web-like microfrac.

High torque & poss fractures f/ 4060'-4130'. Loss zone w/ 12 bbls lost after svy.

Fish cones w/magnet @ 4130'. RIH w/ NB#12 HTC ATJ-2. POH 4'/2hrs. Mill junk. RIH & drlg w/60% returns.

Rhyolite: v lt-med gryish grn-med grn, mod sft-mod hd, vis flow bnd, mnr rel felds & mafic xls imbbd in microxln mtx, com comp pumice frags, loc vis mnr slicks, hvly chlrtzd, loc hem siltstn, grding into obsidian.

Obsidian: v dk gry-blk, dk brnish blk-redish blk, occ med gry, mod hd-hd, brittle, mass, glassy w/conchoidal frac, fresh-mod-str devit, r-loc com spherulites, com banded, loc volc rock frags, r chlor amygs.

Rhyolite: lt-med gry, loc lt-med gryish grn-redish gry, hd-v hd, aphan-v fn gr, r-tr brkn felds & qtz xtls, tr-loc com pumice frags, mod silicifctn, loc sl-mod chlortzn, occ flow banding, loc recmntd brecc, euhed qtz @4260', r-loc mnr qtz vng, r sub-euhed anyyd, r dism pyr loc altrd t/hematite.

Note: Encounter fractures @4407'. Lose circ @4410'. Regain partial returns @4415'. Drill ahead.

Rhyolite: pred med-med dk gry w/sl purp cast, loc mnr v lt-med grnish gry, mod hd-v hd, fri, aphan-v fn gr tex, r-tr vis felds & qtz & mica xls, mod silicifd, occ vis flow bnding, mod chlrtzd basalt dike (?) @4440', r-mnr calc, tr-mnr disem pyr below 4440', r hem alt, r-tr chlor alt.

Basalt: med-dk grnsh gry, med-dk redsh gry, med gry, mod hd-hd, occ v hd, mass, aphan-fn gr amygdaloidal tex, com-abun milky qtz & chlor & anhyd amygds, mod-str hematitic altrn, mod chlortzn & felds altrn, sl calc, r qtz vng, r dism & vn pyr, r anhyd, mnr-com dism magnetite.

Basalt: lt-med grnsh gry, lt-dk redsh gry, med redsh brn, lt-med grn, lt grnsh gry, mod hd-hd, mass, aphan-fn gr amygdaloidal tex, abun milky qtz & chlor & calc amygds, mod-loc v str hematitic altrn, mod-str chlortzn, mod felds altrn, tr-mnr felds laths (.5-3mm), tr calc, r qtz vng, r-tr dism & vn pyr, mnr-abun dism magnetite, r anhyd.

Basalt: pred med lt-med dk brnish/rdish gry, loc med-dk grnish gry frsh frags incr w/depth, mod hd-hd, aphan-microxln tx, vis tr-mnr mod alt olivene phenos, tr v fn magnetite xls, tr-com opal/chlor fill amygds, occ vis v fn-microxln wht felds, r-tr cly-trnsl anhyd xls, r-tr calc vng & xls, r-tr disem pyr, tr-abnd hem alt, loc tr-mnr chlor alt, loc scoria/hem siltstn soil zones.

Lost total circ @ 4733'. Mix & pump LCM pill. Drlg blind to 4740' & get 70-80% returns. Drlg ahead

Basalt: pred med lt-med dk gry, sl grnish cast, occ sl rdish cast, mod hd-hd, aphan-microxln tx, com vis blk v fn magnetite xls, com unalt grn olivene xls, pred unalt, r vesc w/ opal fill, occ-r flow bndg vis, pred fresh appr, r-tr qtz, r calc, r-tr pyr, r chlor alt, r hem alt.

Continue to drill ahead with partial returns. Mixing mud to maintain volume & add LCM to slow loss.

Siltstone: brick red-redsh brn, frm-loc mod hs, mass, pred clay matrix w/mnr-abun silt size rhyo & basalt & pum & qtz frags, sl calc, loc r dism pyr.

Rhyolite: predlt-med gry w/ lt grnish & lt purpish cast, mod hd-hd, fri, sl silic, aphan-v fn xln tx, r-tr brkn felds & qtz, occ flow bndg, tr-mnr vis chlor/opal amygds, r-tr blk v fn magnetite xls, r-tr qtz microvng, r-tr calc, r-tr disem pyr, r hem, tr chlor alt.

Tuff: pred wht-med lt gryish grn-med grnish gry, loc blchd appr, mod hd-hd, mnr-com vis flow bndg, tr-mnr rel collapsed pummice frags vis, aphan-mas grndmass, tr-com vis frac felds & qtz xls, r-tr v fn mica xls, r-tr qtz microvng, r-tr calc, r-tr pyr, v r hem alt, tr-mnr chlor alt.

Sandstone: v lt-med gry, lt gry grn, occ dk gry, frm-mod hd, fri, v fn-fn gr, occ med gr, subang-subrndd, mod-pr sorting, pred qtz & basalt & rhyo w/r mica in frm clay mtz, r dism pyr.

Siltstone: lt-med redsh brn-brick red, med-dk brn, frm-mod hd, occ brit, occ plty, mass, pred clay matrix w/tr-mnr qtz & basalt & rhyo & pum frags, com grdg t/claystone, sl calc, loc r dism pyr.

Basalt: med-dk grysh brn, med-dk yel grnsh brn, lt-med redsh brm, mass, mod hd-hd, loc v hd, aphan hematitic altrd tex w/com-abun qtz & chor & anhyd amygds, bcmg fresh-mod altrd fn-med gr gran tex w/abun subhed oliv xtls f/5220', com dism magnetite, r qtz & tr-mnr calc vng, r dism pyr, r anhyd.

Basalt (Hyalocalstite): lt-med blu grn, lt-med grysh grn, redsh brn w/blu grn, sft-mod hd, hyalohyaliine tex, pred devit glass, r glassy rinds, com irreg mott app, abun str-v str hematitic altrn w/tr-com blu grn relic glass, loc brecc appr (?), r dism pyr.

Basalt: pred med-dk rdish brn-med rdish gry, loc com lt-med gryish grn-med bluish gry, mod sft-mod hd, glassy & abnt shattered hyalohyaline tx, com intmxd w/tuff & rhyolite & sltstn frags, abnt med-v fn brecc appr, r-tr calc, com-abnt hem alt.

Tuff: pred v lt gryish grn-med gry grn-med grn, occ loc wht, occ sl-mnr rdish hem stng, mod sft-mod hd, mas grndmass abnt hvly alt to clay, abnt fn-v fn rndd/spherical volc & glsy clasts, poss water-laid tuff seds, r-tr vis crushed pummice frags, r-mnr vis flow bndg, mod chlor alt & bleached appr, r anhyd xls, r-tr qtz & calc, r-tr disem pyr, loc r-mnr hem alt, mnr-abnt chlor alt.

Sandstone: v lt-med grn, lt-med grysh grn, lt-med blu grn, lt gry, occ redsh gry grn, sft-loc mod hd, fri, com disagg, pred ang-sub ang-subrndd lith frags of tuff & pumice & devit glass w/detridal qtz & occ anhyd amygds & mnr rhyo & basalt frags, v fn-med-loc crs gr, pr sorting, mod-v str altrd clay/tuffaceous matrix, r qtz vngr-tr calc, loc r-tr hematitic, r dism & occ vn pyr.

Basalt: pred med lt-med dk gryish grn, loc blchd appr, mod sft-mod hd, mass-aphan tex, abnt vis wht microxln felds w/ suc appr, r amygs, com-v com hyalohyaline & shattered appr w/ wht clay mtx, com intbbd w/ siltstn & sdstns a/a, tr qtz & calc microvng, r-tr pyr, r hem alt, mnr-com hvy chlortzd alt.

Rhyolite: med gry-v dk gry, abnt lt buff gry-med gryish brn, mod sft-mod hd, fri, aphan tx, v com vis flow bndg, com vis crushed & streched pumm frags, com frac wht felds, fresh appr, tr qtz & calc microfracs, v r-tr disem pyr, v r-r hem, r chlor alt.

Basalt: f/5740-5757', pred med gryish grn-dk grnish gry-blkish grn, occ trnsl, sft-mod sft, mod-hvly serpentnzd alt to abnt clay, water absorb, aphan-microxln tx, loc intbbd w/ mnr med-dk brn clystn/sltstn & alt rhy frags, v com vis slicks/fault gouge.

Get stuck @5757'. Jar free. POOH. L/D NMDC, stabs, circ & cond mud. RIH, C/O t/5742', get stuck.

Jar free, single out t/5670'. POOH & cond mud. Run E-Logs. Run 5" liner 2902-5723'.

Run Pruett Temperature & Pressure Logs & run Injection Test.